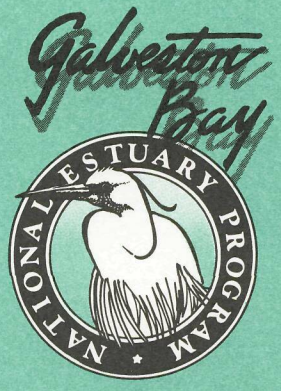
Recreational Fishery By-Catch in the Galveston Bay System



Galveston Bay
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Recreational Fishery By-Catch in the Galveston Bay System

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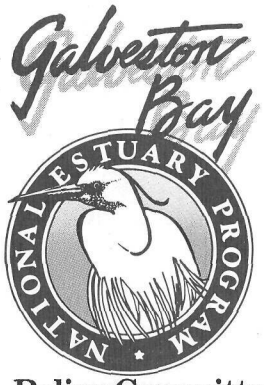

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RECREATIONAL FISHERIES BY-CATCH IN GALVESTON BAY

Gary E. Saul, PhD.
Principal Investigator

EXECUTIVE SUMMARY

The Galveston Bay National Estuary Program is characterizing the status and trends in resource condition as a foundation for the Comprehensive Conservation and Management Plan for the Galveston Bay system. The purpose of this project was to examine the literature and existing data to determine the magnitude and composition of the recreational finfish and shellfish by-catch in the Galveston Bay system.

A preliminary estimate of the recreational by-catch of sport-boat fishermen was made using a combination of data obtained from the National Marine Fisheries Service's (NMFS) Marine Recreational Fishery Statistics Survey (MRFSS) and routine sport-boat harvest monitoring data provided by the Texas Parks and Wildlife Department (TPWD). Data from the MRFSSs included landings of finfishes, determined to species by NMFS contractors, and by-catch data (numbers and disposition by species) based on fishermen recall during intercept surveys. Data from TPWD included estimated annual landings of finfishes by sport-boat fishermen as determined by TPWD fisheries professionals in intercept surveys.

Recreational sport-boat fishermen caught and released approximately two fish for every fish landed. Because of the limited nature of the data, estimates by species and year were not made. During the period of 1979-1985, the years of concurrent data collection by the NMFS and the TPWD, it was estimated that sport-boat fishermen caught and released between 1.2 and 3.5 million fish in the Galveston Bay system. Approximately 5 percent of the fish reported released, were reported as being released dead. Available literature on hooking and handling mortality suggests that less than 15 percent of red drum released alive and up to 30 percent of spotted seatrout released alive die from injuries or stresses related to capture within 7 days of being hooked, handled and released.

TPWD biologists used sport-fishing techniques to capture spotted seatrout for tagging purposes. These 'sport fishermen' had a lower total by-catch ratio than NMFS surveyed fishermen. TPWD professionals caught and released about one fish for every fish tagged. If it is assumed that fishermen fishing specifically for spotted seatrout would retain other desired species, (e.g., red drum or Atlantic croaker) the estimated by-catch by these specialty fishermen would be even less.

Because by-catch occurs during the fishing activity, typical sampling methods, such as intercept surveys conducted at the completion of the fishing trip, do not provide verifiable data for estimating the composition and magnitude of the by-catch. Studies have shown that the marine

fishermen, in general, can not identify accurately the fish they catch, nor recall accurately specific events, such as the total numbers, by species, of fish caught. Therefore, studies relying on recall alone would produce data of limited utility for a fisheries manager.

Additional studies suggested to further explore recreational by-catch include: limiting by-catch recall studies to those species under management regulations, using professionals (e.g., TPWD, NMFS, university or other biologists) to emulate sport-fishermen to determine composition and magnitude of by-catch, using volunteer fishermen to record catch information in logbooks, and conducting hooking and handling mortality studies of selected species.

No estimates for recreational shellfish by-catch were possible due to lack of information. It is believed that the magnitude of recreational shellfish by-catch is small relative to the by-catch of commercial shellfish fishermen due to limited recreational participation and stringent recreational possession regulations.